What is claimed is:

1. An optical module in which an optical active element and an optical waveguide are optically coupled, characterized in that a spot-size conversion region configured by gradually increasing or reducing a width or a thickness of a waveguide, or both thereof is provided at the end or inside of said optical waveguide to which said optical active element is coupled.

2. The optical module according to claim 1, wherein said optical active element is a light-emitting element and said spot-size conversion region is configured by reducing a width or a thickness of a waveguide, or both thereof all the more in said light-emitting element side.

3. The optical module according to claim 1, wherein said optical active element is a photoreceptive element and said spot-size conversion region is configured by increasing a width or a thickness of a waveguide, or both thereof all the more in said photoreceptive element side.

4. The optical module according to claim 1, characterized in that refractive index matching resin having the same-level refractive index as that of said optical waveguide is charged in the optical coupling part between said optical waveguide and said optical active element.

5. The optical module according to claim 1, wherein said optical waveguide is a Y-type branch optical waveguide wherein one single-mode waveguide was branched into a first and a second branch waveguides and

said optical active element includes:

a light-emitting element being optically coupled to said first branch waveguide; and

a photoreceptive element being optically coupled to said second branch waveguide; and

said spot-size conversion region includes:

a first spot-size conversion region configured by reducing a width or a thickness of a waveguide, or both thereof all the more in said light-emitting element side, said first spot-size conversion region being provided at the end or inside of said first branch waveguide to which said light-emitting element is optically coupled; and

a second spot-size conversion region configured by increasing a width or a thickness of a waveguide, or both thereof increases all the more in said photoreceptive element side, said second spot-size conversion region being provided at the end or inside of said second branch waveguide to which said photoreceptive element is optically coupled.

6. The optical module according to claim 5, characterized

in that refractive index matching resin having the same-level refractive index as that of said single-mode waveguide is charged in the optical coupling part between said single-mode waveguide and an optical fiber.

7. The optical module according to claim 1,wherein said optical waveguide is a Y-type branch optical waveguide wherein one single-mode waveguide was branched into a first and a second branch waveguides;

said optical module further comprising:

said optical active element includes:

a light-emitting element being optically coupled to said first branch waveguide; and

a photoreceptive element being optically coupled to said single-mode waveguide; and

said spot-size conversion region includes:

a first spot-size conversion region configured by reducing a width or a thickness of a waveguide, or both thereof all the more in said light-emitting element side, said first spot-size conversion region being provided at the end or inside of said first branch waveguide to which said light-emitting element is optically coupled; and

a second spot-size conversion region configured by increasing a width or a thickness of a waveguide, or both thereof all the more in said photoreceptive element side, said

second spot-size conversion region being provided at the end or inside of said single-mode waveguide to which said photoreceptive element is optically coupled; and

a function which divides lights with different wavelength lights, which is put between said one single-mode waveguide and Y branch part, wavelength selection means of reflecting light with a first wavelength which is emitted from said light-emitting element towards said second branch waveguide, and of transmitting light with a second wavelength, different from said first wavelength, which is guided by said second branch waveguide toward said one single-mode waveguide.

8. The optical module according to claim 7, characterized in that refractive index matching resin having the same-level refractive index as that of said second branch waveguide is charged in the optical coupling part between said second branch waveguide and an optical fiber.